

CLAIMS

1. A simulated neon-light tube assembly comprising:
 - a) a transparent tube having a open first end and a second end, and an inner and outer surface;
 - 5 b) a light-diffusing material comprising a plastic film having a wall thickness ranging from 0.031 to 0.188 inches, and wherein said light-diffusing material substantially covers said inner surface of said tube,
 - c) a light source located within and proximate to the open first end of said tube,
 - 10 d) a power source connected to said light source, wherein when said light source is activated by said power source, light is emitted and refracted along said light-diffusing material simulating the glow of a neon-light tube, and
 - 15 e) a light-reflecting disk having a reflecting inner surface and an outer surface, wherein said light-reflecting disk is located within and proximate to said second end of said tube such that a portion of said emitted light impinges on said disk and is reflected back into said tube to produce an even distribution of light along the inner surface of said tube.
- 20 2. The assembly as set forth in claim 1, wherein said transparent tube is made of plastic or glass.
- 25 3. The assembly as set forth in claim 1, wherein said light-diffusing material is a plastic film selected from a group consisting of acetate, vinyl, polyethylene, polypropylene, and polyester.
4. The assembly as set forth in claim 1, wherein said light-diffusing material is a polyester film.

5. The assembly as set forth in claim 1, wherein said light-diffusing material is a rolled sheet of plastic film having a central longitudinal opening.

5 6. The assembly as set forth in claim 5, wherein said rolled sheet of plastic film has a front terminus and a rear terminus, wherein said rolled sheet is inserted through the open first end of said tube with said front terminus juxtaposed at said second end of said tube and said rear terminus located adjacent said open first end of said tube.

10 7. The assembly as set forth in claim 1, wherein said reflecting inner surface of said light reflecting disk has a mirror finish.

15 8. The assembly as set forth in claim 1, wherein said light source is comprised of at least one light emitting diode (LED).

20 9. The assembly as set forth in claim 8, wherein said LED can incorporate or have added externally to said LED a convex or a concave lens that produces a focused focal length that is optimal for a particular length of said tube.

10. The assembly as set forth in claim 1, wherein said power source is comprised of a battery.

25 11. The assembly as set forth in claim 8, wherein said at least one LED is comprised of an LED cluster that includes a red, white and blue LED, wherein said LEDs are located within an LED/tube cap and are connected to an electrical circuit controlled by a three-position switch that allows the LEDs to be individually turned on, turned on all at once, or turned on in a preset sequence.

12. The assembly as set forth in claim 8, further comprising a light-deflecting disk having a reflective inner surface and central opening that fits over said at least one LED, wherein said light-deflecting disk functions in combination with said light-reflecting disk to further produce an even distribution of light along the longitudinal surface of said tube.

13. The assembly as set forth in claim 1, wherein said second end of said tube is closed.

14. The assembly as set forth in claim 1, wherein said second end of said tube is open, said assembly further comprising a second light source located within and proximate to said open second end of said tube.

15. The assembly as set forth in claim 14, wherein said light reflective disk has a central opening that fits over said light source.

16. The assembly as set forth in claim 14, further comprising a second light-reflecting disk having a reflective inner surface and central opening that fits over said first light source, wherein said first light-reflecting disk functions in combination with said second light-reflecting disk to further produce an even distribution of light along the longitudinal surface of said tube.

17. The assembly as set forth in claim 16, wherein said reflecting inner surface of said light reflecting disk has a mirror finish.

18. The assembly as set forth in claim 1, further comprising an opaque sleeve dimensioned to be inserted over said tube, wherein said sleeve having a plurality of openings that allow the light from said tube to be visible only through the openings.

19. The assembly as set forth in claim 1, further comprising a shield located on said inner surface of said transparent tube proximate said light source.
20. The assembly as set forth in claim 1, further comprising a reflective back shield attached to said outer surface of said transparent tube.
21. The assembly as set forth in claim 1, further comprising a reflective back shield located within said transparent tube.

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